



Dms 2096 Rev. D

ISSUE DATE: 6-1-83

MATERIAL SAFETY DATA SHEET

To the Purchaser: This MSDS contains important environmental, health and toxicology information for your employees who have ordered this product. Please be sure this information is given to them. If you resell this product, a copy of this MSDS should be given to the buyer.

MANUFACTURER'S NAME
Ferro Corporation, Composites Division

EMERGENCY PHONE NO.
(216) 641-8580 EXT 235

ADDRESS (number, street, city, state, & zip code)
3512 Helms Avenue, Culver City, CA 90230

SECTION I

CHEMICAL NAME & SYNONYMS
Phenol-Formaldehyde Prepreg/Graphite

TRADE NAME & SYNONYMS
CPH-2207/Graphite

CHEMICAL FAMILY CAS NUMBER
Phenolic Resin 9003-35-4

FORMULA $(C_6H_6O \cdot CH_2O)_X$

SECTION II

OSHA POTENTIAL HAZARDOUS SUBSTANCE IDENTIFIED WITH AN: (HAZ) BEFORE THE NAME	COMPOSITION	%	SPEC.	LD ₅₀		LC ₅₀	
				ORAL	DERMAL	CONC.	HOURS
	(HAZ) Phenol-Formaldehyde Resin	30-50		See Section V			
	Polymer						
	(HAZ) Graphite Fiber	50-70		Not Determined.			

ADDITIONAL INFORMATION

SECTION III PHYSICAL DATA

BOILING POINT (°F.) Resin will cure before boiling	N/A	SPECIFIC GRAVITY (H ₂ O=1)	~ 1.9
VAPOR PRESSURE (mm Hg.) at 25°C	< 1	PERCENT VOLATILE BY VOLUME (%) 10 min/325°F	3-9
VAPOR DENSITY (AIR=1)	> 1	EVAPORATION RATE (N BuAc ±1)	< 1
SOLUBILITY IN WATER	Negligible		
APPEARANCE & ODOR Amber to black color, at ambient temp. a light formaldehyde odor.			

SECTION IV FIRE & EXPLOSION HAZARD DATA

FLASH POINT (method used) Uncured material O.C. > 350°F	FLAMMABLE LIMITS	Lei N/A	Uel N/A
EXTINGUISHING MEDIA CO ₂ , dry chemical foam, water fog			
SPECIAL FIRE FIGHTING PROCEDURES Combustion will give off toxic products, use self-contained breathing apparatus.			

UNUSUAL FIRE & EXPLOSION HAZARDS Airborne dusts produced from grinding or cutting of the cured prepreg resin may ignite if exposed to an ignition source. Graphite fibers will conduct electricity, which, if allowed to get into electrical equipment, can cause malfunctions and fires.

ADAPTED FROM FORM OSHA-20

N/A = NOT APPLICABLE

BOE-C6-0189773

SECTION V HEALTH HAZARD DATA

EXPOSURE LIMIT Organic vapor; recommend ACGIH TLV: 2 ppm (3 mg/m³)
in formaldehyde; Nuisance dust OSHA Standard PEL: 10 mg/m³

term from may **S OF OVEREXPOSURE** Dust and vapor are mild pulmonary and eye irritants. Long breathing of the dusts can damage the lungs. Some workers may become sensitized either breathing vapors from, or skin contact with the uncured resin. Vapors cause asthmatic condition in sensitive workers, where there is poor ventilation. Contact dermatitis could result from repeated handling with unprotected skin. Ingestion, the material is considered to be of minimal toxicity.

EMERGENCY AND FIRST AID PROCEDURES Respiratory irritations and headaches-person should be moved to fresh air and referred to a physician. Eye contact - must be flushed immediately with large quantities of water, medical attention should be obtained without delay. Ingestion, dilute with milk or water, induce vomiting, call a physician. Skin irritation - remove person from the causative source, thoroughly wash with soap and water after contact. If irritation persists for several days, seek medical treatment from a physician competent in industrial health.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)		For the uncured resin, strong acids or alkalis, strong oxidizing agents	
HAZARDOUS DECOMPOSITION PRODUCTS		Phenol, methyl phenols, carbon monoxide, carbon dioxide, aldehydes	
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Normal procedures for solid trash.

WASTE DISPOSAL METHOD Use a state or local agency approved land fill or incinerator. The cured material is not readily biodegradable and contains no significant percentage of material extractable in water so its effect on ground water in case of land fill disposal should be negligible.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type) Above the TLV: NIOSH approved for formaldehyde vapor and pneumoconiosis producing dusts.		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (general)	
	for grinding and sawing	
	for lay up and curing rooms	
PROTECTIVE GLOVES Impervious rubber gloves polyolefin or neoprene type		EYE PROTECTION Goggles for protection from dust in machining operation
OTHER PROTECTIVE EQUIPMENT Long sleeve shirts and pants, recommend apron be worn for lay-up operations, wear clean clothes daily, resin contaminated clothes could promote dermatitis.		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING Store the uncured prepreg at 40°F or less. Keep the uncured material away from sources of ignition. Wash hands before eating or smoking - DO NOT store food in work area.

Judgements as to the suitability of information herein for the purchaser's purposes are necessarily the purchaser's responsibility. Reasonable care has been taken in the preparation of this information, but FERRO EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY AS TO ACCURACY OR SUITABILITY OF THIS INFORMATION FOR ANY PURCHASER'S USE OR FOR ANY CONSEQUENCE OF ITS